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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/780,617	02/12/2001	Hiroaki Kaneko	040302/0259	9112

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EXAMINER
TSANG FOSTER, SUSY N

ART UNIT	PAPER NUMBER
1745	15

DATE MAILED: 12/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

0615

Office Action Summary	Application No.	Applicant(s)
	09/780,617	KANEKO ET AL.
	Examiner Susy N Tsang-Foster	Art Unit 1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 18 August 2003.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-3 and 5-14 is/are pending in the application.
- 4a) Of the above claim(s) 5,13 and 14 is/are withdrawn from consideration.
- 5) Claim(s) 8 is/are allowed.
- 6) Claim(s) 1-3,6,7 and 9-12 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) The translation of the foreign language provisional application has been received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION***Election/Restrictions***

1. Newly submitted claims 13 and 14 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: Claims 13 and 14 are directly to a method of using a catalyst according to claim 1 comprising contacting the catalyst according to claim 1 with CH₃OH and H₂O to produce CO₂ and 3H₂ and contacting the catalyst according to claim 1 with CH₃OH and ½ O₂ to produce CO₂ and 2H₂. Previously examined claims 1-3, and 6-11 are drawn to a perovskite structure catalyst composition and an apparatus comprising the perovskite structure catalyst composition, classified in class 502, subclass 525. Newly submitted claims 13 and 14 are drawn to a method of using the perovskite structure catalyst composition, classified in class 423, subclass 245.3 Inventions of previously examined claims and claims 13 and 14 are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the catalyst can be used for exhaust gas treatment for removing CO and NO_x from automobile exhaust (see JP 63-302950 CAPLUS Abstract) instead of using the catalyst to produce CO₂ and H₂ from methanol as claimed.

The method of producing a producing a perovskite structure catalyst composition, classified in class 502, subclass 525 is independent from the method of using a catalyst

composition to produce hydrogen and carbon dioxide from methanol which is classified in class 423, subclass 245.3.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 13 and 14 in addition to claim 5 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Response to Amendment

2. This Office Action is responsive to the amendment filed on 8/18/2003. Claims 1, 7, and 8 have been amended. Claims 12-14 have been added. Claims 5, 13 and 14 are withdrawn from further consideration as being drawn to a non-elected invention. Claim 8 is allowed. Claims 1-3, 6, 7, and 9-12 are finally rejected for reasons necessitated by the amendment.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

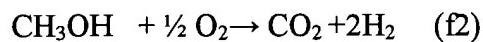
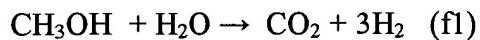
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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-3, and 12 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 63-302950 A2 (CAPLUS abstract 1989).

The CAPLUS abstract for JP 63-302950 A discloses a catalyst composition that is a perovskite oxide of the general formula $A_{1-x}A'_x B_{1-y}B'_y O_3$ where A is a rare earth metal, A' is at least one of Ce, Pr, Sm, Eu, Sc, Bi, Pb, Ca, Sr, and Ba; B is at least one of Fe, Zn, Sn, Mg, Co, Ni, Ti, Nb, V, Cu, and Mn; B' is at least one of Pt, Rh, Pd, Ru and Ir; and x is 0.1-0.9; y is 0-0.9. Examples with La as A are disclosed. Specifically, some of the examples disclosed are $La_{0.8}Pr_{0.2}Fe_{0.95}Ru_{0.05}O_3$ (see page 7, column 2), and $La_{0.8}Pr_{0.2}Fe_{0.95}Pd_{0.05}O_3$ (page 7, column 2). It is clear from the general formula that the subscript for La can be from 0.1 to 0.9, the subscripts for Pr can be from 0.1 to 0.9, the subscripts for Fe can be from 0.1 to 1 and the subscript for Ru can be from 0 to 0.9. The general formula also discloses that Ru can also be Rh instead. Thus, the general formula given for the catalyst composition in the CAPLUS abstract 1989 for the JP 63-302950 A and the examples of specific catalyst compositions in the JP 63-302950 A anticipate the claims.

The CAPLUS Abstract for the reference does not explicitly disclose that the perovskite oxide works as a catalyst in the following reaction (f1) or (f2):



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However, the perovskite oxide formula disclosed by the reference is identical to that being claimed. Hence, the perovskite oxide disclosed in the reference inherently can function as a catalyst in the above 2 reactions (f1) and (f2).

When the Examiner has reason to believe that functional language (in this instance, the perovskite oxide works as a catalyst in the two reactions as claimed and asserted to be critical for establishing novelty in claimed subject matter may, in fact be an inherent characteristic of the prior art as discussed above, the burden of proof is shifted to the applicant to prove that the subject matter shown in the prior art does not possess the characteristics relied upon. *In re Fitzgerald et al.* 205 USPQ 594.

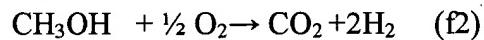
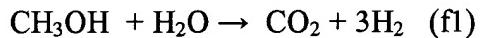
6. Claims 1, 7, and 12 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over WO 97/42495.

It is noted a preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). In claim 1, the intended use of electrode catalyst for a fuel cell is not given patentable weight.

WO 97/42495 discloses a gas sensor comprising a gas sensor having a semiconductor electrode that is made of $(La_{0.8}Sr_{0.2})(Co_{0.9}Ru_{0.1})O_3$ (see abstract and page 12, lines 4-10).

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The WO 97/42495 reference does not explicitly disclose that the perovskite oxide works as a catalyst in the following reaction (f1) or (f2):



and that the semiconductor electrode works as a fuel electrode of a fuel cell.

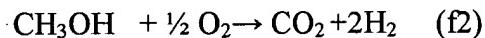
However, the perovskite oxide formula disclosed by the reference is identical to that being claimed. Hence, the perovskite oxide disclosed in the reference inherently can function as a catalyst in the above 2 reactions (f1) and (f2). Similarly, the semiconductor electrode of WO 97/424495 comprising $(\text{La}_{0.8}\text{Sr}_{0.2})(\text{Co}_{0.9}\text{Ru}_{0.1})\text{O}_3$ can inherently function as a fuel electrode of a fuel cell since the catalyst in the electrode as disclosed is identical to that being claimed.

When the Examiner has reason to believe that functional language (in this instance, the perovskite oxide works as a catalyst in the two reactions as claimed and that the catalyst composition works as a fuel electrode of the fuel cell and asserted to be critical for establishing novelty in claimed subject matter may, in fact be an inherent characteristic of the prior art as discussed above, the burden of proof is shifted to the applicant to prove that the subject matter shown in the prior art does not possess the characteristics relied upon. *In re Fitzgerald et al.* 205 USPQ 594.

7. Claims 1, 2, 9, and 12 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hart (US 4,321,250).

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Hart (US 4,321,250) discloses all the limitations of claims 1, 2, and 9 (See abstract; col. 1, lines 10-35; col. 2, lines 15-31; col. 3, lines 15-20; col. 4, line 40 to col. 5, line 18 of the Hart reference) except explicitly stating that the perovskite oxide works as a catalyst in the following reaction (f1) or (f2):



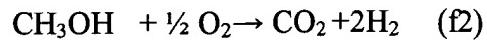
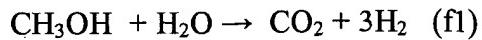
However, the perovskite oxide formula disclosed by the reference is identical to that being claimed. Hence, the perovskite oxide disclosed in the reference inherently can function as a catalyst in the above 2 reactions (f1) and (f2).

When the Examiner has reason to believe that functional language (in this instance, the perovskite oxide works as a catalyst in the two reactions as claimed and asserted to be critical for establishing novelty in claimed subject matter may, in fact be an inherent characteristic of the prior art as discussed above, the burden of proof is shifted to the applicant to prove that the subject matter shown in the prior art does not possess the characteristics relied upon. *In re Fitzgerald et al.* 205 USPQ 594.

8. Claims 1, 2, 6, 9, and 12 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Lauder (US 4,126,580).

Lauder discloses all the limitations of claims 1, 2, 6, and 9 (See abstract; col. 4, lines 34-40; col. 5, lines 44-68; col. 6, lines 33-63; col. 10, lines 7-43; Example O of Table 1 of the Lauder reference) except explicitly stating that the perovskite oxide works as a catalyst in the following reaction (f1) or (f2):

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However, the perovskite oxide formula disclosed by the reference is identical to that being claimed. Hence, the perovskite oxide disclosed in the reference inherently can function as a catalyst in the above 2 reactions (f1) and (f2).

When the Examiner has reason to believe that functional language (in this instance, the perovskite oxide works as a catalyst in the two reactions as claimed and asserted to be critical for establishing novelty in claimed subject matter may, in fact be an inherent characteristic of the prior art as discussed above, the burden of proof is shifted to the applicant to prove that the subject matter shown in the prior art does not possess the characteristics relied upon. *In re Fitzgerald et al.* 205 USPQ 594.

9. Claims 1 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Negishi (US 6,165,633) in view of Lauder (US 4,126,580).

Negishi discloses a fuel cell system comprises the methanol reforming apparatus, a fuel cell, pipings for supplying a gas reformed by the reforming apparatus to the fuel cell, and pipings for supplying a gas containing oxygen to the fuel cell (See Figure 1). The methanol reforming apparatus comprises a fuel gas supply source, an oxygen supply source, a steam supply source, and pipings for supplying a fuel gas, an oxygen, and a steam supplied from respective supply sources to the reformer (see Figure 1).

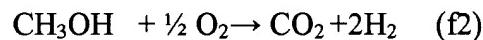
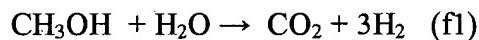
Negishi does not disclose that the catalyst in the reformer is given by the general formula recited in instant claim 1.

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Lauder teaches a reformer utilizing perovskite catalysts of the general formula ABO_3 (see abstract) and specifically $[\text{Sr}_{0.2}\text{La}_{0.8}][\text{Co}_{0.9}\text{Ru}_{0.1}]\text{O}_3$ (see table 1, col. 11), that these catalysts are stable and durable at high temperatures (col. 1, lines 44-46), and that the catalysts can be used to steam reform hydrocarbons (col. 6, lines 34-50). Methanol is a hydrocarbon.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use $[\text{Sr}_{0.2}\text{La}_{0.8}][\text{Co}_{0.9}\text{Ru}_{0.1}]\text{O}_3$ in the methanol reformer of Negishi because $[\text{Sr}_{0.2}\text{La}_{0.8}][\text{Co}_{0.9}\text{Ru}_{0.1}]\text{O}_3$ is stable and durable at high temperatures during the reforming process as taught by Lauder.

The Lauder reference does not explicitly disclose that the perovskite oxide works as a catalyst in the following reaction (f1) or (f2):



However, the perovskite oxide formula disclosed by the reference is identical to that being claimed. Hence, the perovskite oxide disclosed in the reference inherently can function as a catalyst in the above 2 reactions (f1) and (f2).

When the Examiner has reason to believe that functional language (in this instance, the perovskite oxide works as a catalyst in the two reactions as claimed and asserted to be critical for establishing novelty in claimed subject matter may, in fact be an inherent characteristic of the prior art as discussed above, the burden of proof is shifted to the applicant to prove that the subject matter shown in the prior art does not possess the characteristics relied upon. *In re Fitzgerald et al.* 205 USPQ 594.

Response to Arguments

10. Applicant's arguments with respect to claims 1-3, and 6-11 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

11. Claim 8 is allowed.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications should be directed to examiner Susy Tsang-Foster, Ph.D. whose telephone number is (703) 305-0588. The examiner can normally be reached on Monday through Friday from 9:30 AM to 7:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at (703) 308-2383. The phone number for the organization where this application or proceeding is assigned is (703) 305-5900.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

st/



Susy Tsang-Foster
Primary Examiner
Art Unit 1745